/466 cont./

411 322 elastically bending the parts that stand out. Painstakingly and carefully he must now cut a notch at either end; the one for the arrowhead is deep and sharp-edged, the other shallow and rounded. This is accomplished by means of protracted rubbing and filing with a small splinter of sandstone or with the rough edge of a mussel shell.

411 324 Slate, as well as quartz, is found in various places on the Cape Horn Archipelago, and both kinds of stone are used for the arrowheads, known as ēkēna, inix, yēlkus. Slate is the easiest to work. The Indians choose a suitable small slab of stone, and, scraping it on a fine-grained piece of sandstone, they try first to obtain the desired triangular shape with the sharp edges on both sides which converge in a flat point. Afterwards they carefully fashion the perfectly rectangular tang. /467/ These points always turn out to be small. Their total length is about 30 millimeters, seven millimeters of which apply to the tang; the largest distance between the lateral corners is around 15 millimeters (Fig. 32).

Sometimes the arrowheads of quartz (170) are a little

170. Fitz-Roy (a):139 speaks in general of "arrows headed with obsidian, agate, or jasper" /cited in English/, which is more or less correct.

longer, and the base of the triangle is a slightly curved arch. In order to achieve this and to fashion the necessary tang, the Yamana (171) proceeds exactly as does the Selk'nam. He hangs

171. Wieghardt: 26 erroneously believes that "the Ona make these points, because the Yahgan do not know how to work either glass or obsidians" /translated from Spanish/.

a soft /Fig. 32 appears here/ scrap of leather over his left palm and with this he grasps the suitable stone splinter with thumb and index finger. While he works he rests his left fist against his thigh. His right fist grasps a small blunt stick of bone which he

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places on the edge of the little piece of stone, and by exerting strong pressure with slight turning, he gouges out tiny shell-shaped splinters very close together. In other words, he presses off fine flakes, little by little, from the entire piece until the desired shape is achieved. The upper and lower surface are easier to work because larger splinters can be broken off; it is much harder to shape the tang exactly. For the last few decades broken glass has been used instead of quartz; it can be worked much more easily and even more quickly.

On my second expedition I gave old Alfredo a piece of thick bottle-glass and asked him to make a dagger point nine inches long, with the usual triangular shape and the adjoining tang. He was particularly pleased when, under the pressure of the little bone stick, the tiny particles of glass chipped off with a crunching sound. To my surprise he finished the beautiful point in 55 minutes, without having hurried unduly. He confessed: "To make a point of quartz of the same size for an arrow, a capable Yamana needs a whole /468/ day." Nowadays, [177] instead of the customary small bone stick, they use a thick iron nail or an iron awl (172),

Fig. 32. Arrowheads of Slate, Bone, and Flint. Natural size.

172. Hyades (h):34 and (q):360 mentions that "the Fuegian Jakaif simply cut the glass which was to form the point by scraping a piece of window glass with a knife. When he did not have glass he used a fragment of stone (flint)" /translated from French/.

1:Gustinde--171 E-5 (1918-1924) 1937 SH6 Yahgan SH6

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Fig. 39. Dagger Points or Lance Points.
Natural size.

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226 line. When the fish has been brought near the surface, she reaches down and grasps it with a sure hand, pushing her second and third finger under each gill cover. After she has lifted it out of the water, she bites through its neck and kills it.

227 /491/ The snares and fishing implements used by our Yamana show extreme appropriateness. Each one of these things proves that it enables the Indian, with a small amount of effort, to get the wild animals he wants or is stalking.

9. Tools

412 The Fuegians have not yet advanced to a universal or even
• 324 preponderant use of stone tools. To blame this on the sparse occurrence of quartzite and slate in those regions is not sufficient explanation. When iron and glass were introduced by Europeans,
[177] the natives used these materials immediately, albeit in limited measure, without, however, changing the original form of their implements or replacing them by others. Actual working of the stone seems necessary only in the case of stone arrowheads and dagger points (p. 169). It cannot be definitely shown whether these Fuegians also shaped the round black stone with a groove, known as tesi. Hence the greater part of their tools consists of mussel shells, wood, and bone. This fact can be easily ascertained from the accounts of earlier navigators.

The following description pertains to those items as they were made before being influenced by Europeans. We must credit our Fuegians with considerable cultural progress by reason of the fact that they succeeded in making a number of implements of different construction and form, each with a very definite use.

412 We should like to mention briefly here a peculiar form of be-
461 havior of the Yamana which Lothrop (b):139 has also referred to. When they need anything for their implements, they do not take the trouble to make a thorough search for a good piece or await an opportunity to come across a better part. Rather, they take the first thing that comes along if it suffices for their momentary need and if it promises to fulfill the purpose for which it was intended. A better shaped mussel shell to be used as a knife, a more regular

2: Cooper E-4 (no date) 1946 SH6 Yahgan SH6

of several skins sewn together, was sometimes set up—a practice whose origin, native or European, is uncertain. (For details on manufacture and use of canoe, cf.: Lothrop, 1928, pp. 142–145; 1932 a, pp. 251–253; Gusinde, 1937, pp. 436–437.)

After about 1880 the *Yahgan* began to give up their traditional bark canoes, and to adopt the dugout. Still later, prior to Lothrop's visit in 1924–25, the dugout had been entirely superseded by the dory, of European type and origin.

The *Yahgan* never adopted the plank boat from their *Alacaluf* neighbors and never used rafts or skin-covered watercraft, so far as our records reveal.

MANUFACTURES

Pottery, weaving, and metallurgy were entirely absent; no traces of pottery have been discovered archeologically in *Yahgan* territory.

String-making and sewing.—Plant fibers, plain, shredded, or braided, were used in basket making, canoe sewing, and for mooring lines, respectively; braided whale sinew, for necklaces, fishing lines, and tool and weapon lashings; braided guanaco sinew, for bowstrings; whalebone, in sewing canoes and for bird snares and fishline nooses; seal-hide thongs, for tool and weapon lashings, harpoon lines, basket handles, mooring lines, and bowstrings. Awls were made of bone and wood, unhafted. The drill was lacking.

Basketry.—Four techniques in basket making were in use: (1) Simple half-hitch coiled, the commonest type (fig. 13, *top*); (2) twisted half-hitch coiled, rarer (fig. 13, *center*); (3) knotted half-hitch coiled, not common (fig. 13, *bottom*); (4) a sort of wrapped type. The first three were of excellent craftsmanship; the last, very crudely woven, and used only as a dip net for catching very small fish. The material for all four was a rush (*Juncus magellanicus*). The coiled baskets were more or less oblong-spheroid in shape, and had a carrying handle of thong or plaited rush (pl. 33, *c*).

Skin dressing.—No process of dressing proper is reported. Seal-skins were stretched on the ground, covered with grass and moss, and left so for a while, to help dehair them. Drying frames were apparently used. The scraper consisted of a mussel shell lashed to a cylindrical stone haft. The *Yahgan* made thongs flexible by drawing them through their teeth or by chewing them.

Stoneworking.—Little use of worked stone was made except for arrowheads and, rarely, scrapers. The workmanship was crude. Archeologically, there are some traces of stone pecking and polishing (Lothrop, 1928, p. 203; cf. Bird, 1938).

Containers.—Cylindrical buckets (pl. 33, *e*), of *Nothofagus betuloides* bark, for carrying and holding drinking water and for bailing, were made by the woman, with the use of a barking tool dif-